

# Exponential and Log Graphs Homework

## Lesson 3

#1 – 3. Write the equation for the asymptote of each function below. Would the function's graph show exponential growth, or exponential decay?

1.  $f(x) = 4^x + 3$

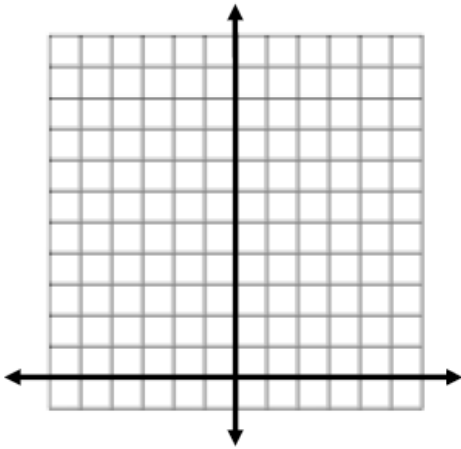
2.  $g(x) = 3\left(\frac{5}{8}\right)^{x-4}$

3.  $f(x) = 2(3)^{x-1} - 5$

#4 – 7. Graph each exponential function using the table provided. Then find the equation for the asymptote, and the function's domain and range.

4.  $f(x) = 2^x$

x	y
-3	
-2	
-1	
0	
1	
2	
3	

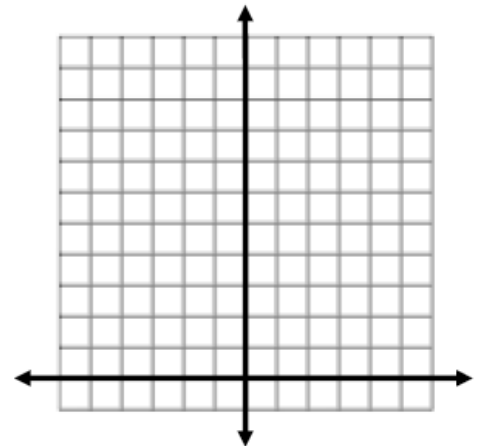


Asymptote: \_\_\_\_\_

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

5.  $g(x) = 3(2)^x$

x	y
-3	
-2	
-1	
0	
1	
2	
3	

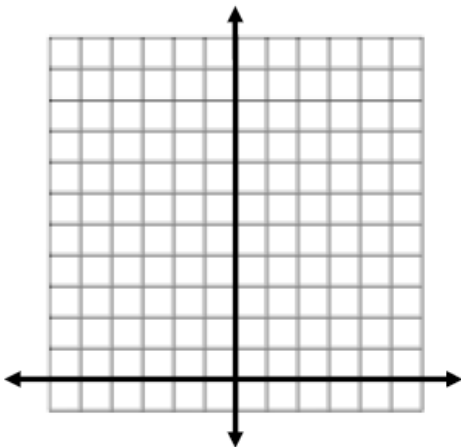


Asymptote: \_\_\_\_\_

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

6.  $f(x) = 3\left(\frac{1}{2}\right)^x - 2$

x	y
-3	
-2	
-1	
0	
1	
2	
3	

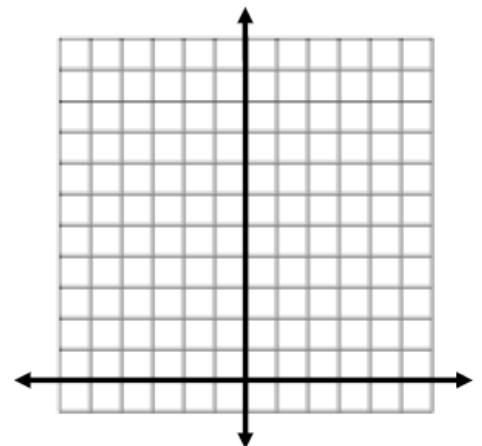


Asymptote: \_\_\_\_\_

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

7.  $g(x) = 2^{x-1} + 2$

x	y
-3	
-2	
-1	
0	
1	
2	
3	



Asymptote: \_\_\_\_\_

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

**#8 – 10. Convert each log function to an exponential function.**

8.  $y = \log_5 x$

9.  $y = \log_4 x - 4$

10.  $y = \log_6(x - 2) + 1$

**#11 –13. Describe the transformations of each log function.**

11.  $f(x) = \log_5(x + 3)$

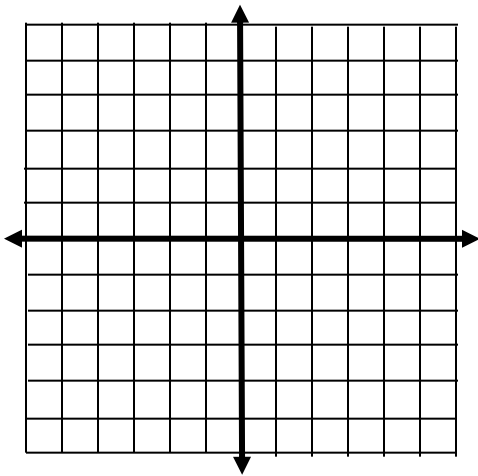
12.  $g(x) = \log_4 x - 4$

13.  $f(x) = \log_6(x - 2) + 1$

**#14 – 17. Graph each exponential function using the table provided. Then find the equation for the asymptote, and the function's domain and range.**

14.  $f(x) = \log_2 x$

x	y
	-3
	-2
	-1
	0
	1
	2
	3

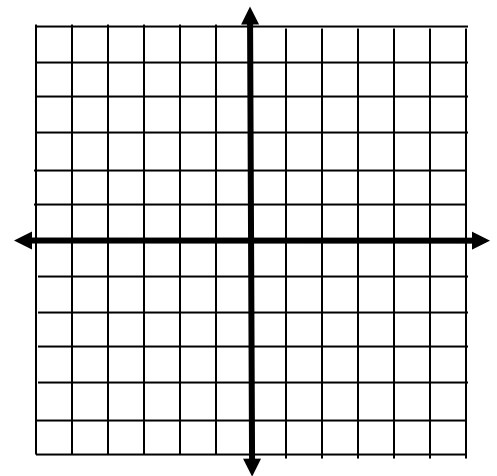


Asymptote: \_\_\_\_\_

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

15.  $g(x) = \log_3(x - 1)$

x	y
	-3
	-2
	-1
	0
	1
	2
	3

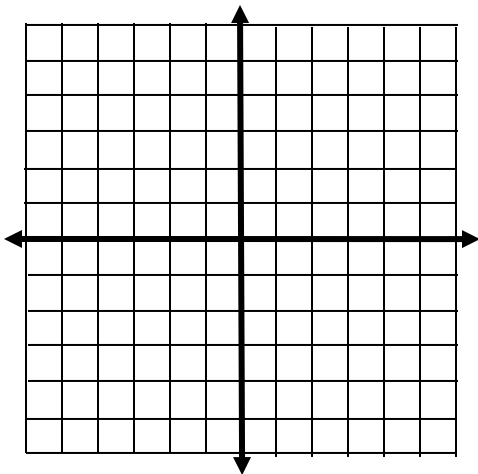


Asymptote: \_\_\_\_\_

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

16.  $f(x) = \log_4 x + 2$

x	y
	-3
	-2
	-1
	0
	1
	2
	3

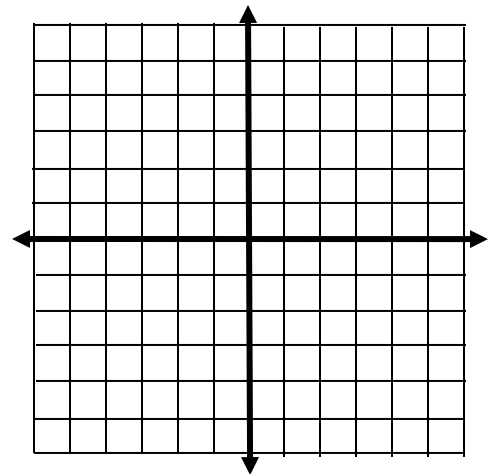


Asymptote: \_\_\_\_\_

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

17.  $g(x) = \log_2(x + 2) - 3$

x	y
	-3
	-2
	-1
	0
	1
	2
	3



Asymptote: \_\_\_\_\_

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

#18 – 23. Match the equation with the graph (the asymptotes are shown on the graph).

\_\_\_\_\_ 18.  $f(x) = \log_3(x + 1)$

\_\_\_\_\_ 19.  $f(x) = 4(2)^x$

\_\_\_\_\_ 20.  $f(x) = (0.5)^{x+1}$

\_\_\_\_\_ 21.  $f(x) = \log(x - 1) + 3$

\_\_\_\_\_ 22.  $f(x) = 2^{x-2} + 1$

\_\_\_\_\_ 23.  $f(x) = \log_4 x - 4$

